

Argentina's Transport Privatization and Re-Regulation

Ups and Downs of a Daring Decade-Long Experience

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Argentina's policy for reform of the transport sector has been a mix of competition *in* the market and, through concessions, *for* the market. Capacity has increased, demand has grown, and prices and services have improved. Public financing has not been eliminated but it has been drastically reduced.



Summary findings

When Argentina initiated reform of its transport sector in 1989, it had few models to follow. It was the first Latin American country to privatize its intercity railroad, to explicitly organize intraport competition, and to grant a private concession to operate its subway. It was second (after Japan) to privatize its urban commuter railways and one of the first in the developing world to grant road concessions to private operators.

Argentina's experience shows that transport privatization and deregulation provide efficiency gains that can be delivered to users. Despite unexpectedly high residual subsidy requirements, fiscal costs are lower, services have improved, and new investment is taking place.

Argentina's decade-long experience shows that the reform process involves learning by doing. Inexperienced new regulators quickly face the challenges in controlling monopoly power and providing long-run incentives for

private investment. Designing sustainable reform requires a commitment by government to minimize its role in the sector and to respect its original promises to both users and concessionaires.

Argentina has learned the importance of building up the regulatory capacity needed to monitor contracts, especially when initial uncertainty about demand and cost conditions is strong and renegotiation is the probable outcome of daring reform.

The government's main challenge in monitoring contracts is to get enough information to reach a balance in its decisions about distributing efficiency gains fairly between consumers and private investors. This is one area in which Argentina may not yet have met the challenge. As the last wave of contract extensions in rail and roads comes to an end, one issue is likely to be the need for better targeting of subsidies for the poor.

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ARGENTINA'S TRANSPORT PRIVATIZATION AND RE-REGULATION: UPS AND DOWNS OF A DARING DECADE-LONG EXPERIENCE

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1. INTRODUCTION

When Argentina initiated the reforms of its transport sector in 1989, it did not have much of a model to follow. Thatcher's infrastructure reforms in the United Kingdom had provided strong inspirations for the overall agenda but Argentina was constructing its own path-breaking way. It was the first in Latin America to privatize its inter-city railroad, the first to organize intra-port competition explicitly, the first to consider granting a private concession to operate its subway, the second (after Japan) to privatize its urban commuters railways and one of the first in the developing world to concession its road to private operators.

Although one of the goals of these reforms was to introduce competition wherever possible and improve service quality, the most pressing objective was fiscal. The reform was to contribute to the shrinking of the size of the government in the infrastructure sector while attracting as much private financing as possible to finance pressing improvements and expansion needs. Auctions to award concession contracts were the main instrument used to introduce competition and achieve efficiency gains while the reductions in subsidy requirements from the government or maximization of payments to the government were built in the process to achieve the fiscal goals. The concession contracts were then expected to become the main instrument for a government getting ready to deliver in its new role as a regulator of "privatized" monopolies.

Considering the size and scope of the changes and the fact that by the end of nineties, so many countries are following the UK's and Argentina's pioneering efforts, it is surprising that so little has been written in the academic literature on this experience. While the United Kingdom's privatization and deregulation have been thoroughly surveyed (see, for example, *Journal of Transport Economics and Policy* (1990.vol24.nº3), *Transport Reviews* (1985.vol5.nº2), etc.), Argentina's transport reform has not received the attention it deserves in view of its role modeling throughout the developing world.¹

This article provides an overview of this experience in ports, rail and roads including significant developments in 1998 which have resulted in the renegotiation of most of the contracts signed since 1990 in railways and roads.² The rest of the paper is organized as follows. For each sector we describe the before and after deregulation and privatization situation and discuss the

¹ World Bank sponsored document have produced most of the published evaluation of this experience to date (Kogan and Thompson, 1994; Kopicki and Thompson, 1995; Barbero, 1996; Estache et al. 1996, Gomez-Ibanez 1997).

² Airport is left out because it was only concessioned less than two years ago and not enough time has elapsed to provide a fair assessment of the outcome of what is proving to be a highly complex challenge

outcomes of the changes. The coverage starts with ports, continues with rail and ends with roads. The last section discusses some of the more complex cross-sectoral issues, including the difficulty Argentina is facing in taking on its new role as a regulator.

2. PORTS AND WATERWAYS

2.1. Before privatization and deregulation

Before its deregulation and privatization program, Argentina's port traffic was declining steadily. This decline was explained by a mix of factors:

- (i) *Strong modal shift towards road transport.* The total loss of traffic between 1970 and 1989 was 10 percent, but cabotage experienced a loss of 30 per cent due to intermodal competition (trucks and pipelines). The port of Buenos Aires alone experienced a 52 percent reduction in the volume of cargo movement. Years of recession and the growth in road transport, particularly to Brazil, Chile (stimulated by a wide trucking deregulation in these two countries) and Patagonia (in the South of Argentina) were among the main contributing factors.
- (ii) *Economic inefficiency of the Argentinean ports.* Argentina's port tariffs and charges had increased steadily during the 1980s, so that right before the reforms, Argentina reportedly had among the highest port charges in the world. Between 1980 and 1991 stevedoring fees had increased in real terms by 250 percent. A combination of restrictions, working practices, high wages, outdated equipment and overly centralized administration was the key reason.
- (iii) *Competition exercised by the ports of Chile.* Part of the hinterland of the ports of Argentina and the ports of Chile is common. Inefficiency in the operation of Argentina's ports and the reform experienced in Chile, explained much of the decline in traffic.
- (iv) *High tariffs and cross subsidization.* Tariffs and practices at the port of Buenos Aires were used as norm for the rest of public ports. Rent equipment charges or stevedores salaries, for example, would be agreed upon for the port of Buenos Aires and then adopted by the other national ports. This caused a higher level of usage costs across the port system than suggested by real local costs since the costs in Buenos Aires were high due to factors such as routine dredging, pilotage and towage services, which represented over 65 percent of the total cost faced by a ship. Without the potential gains from a more competitive environment,

there was no complain since despite its high operating costs, the revenues from the port of Buenos Aires helped to cross-subsidize most of remaining public ports. Between 1988 and 1990, for example, the ports of Buenos Aires enjoyed an average operating surplus of US\$26.7 million per year, while the rest of the port system as a whole had an average operating deficit of US\$19 million.

- (v) *Inefficient and inappropriate investment.* In addition, the lack of adequate infrastructure investments which made the port of Buenos Aires facilities obsolete, as well as its “open port” characteristic, in contrast with a terminal-based port, induced inefficient operating practices and unnecessary costs associated with cargo handling and storage.

Most of these factor should sound familiar to port administrators in most developing countries and in some developed countries. The main difference maybe is that at the time few policymakers had been as daring and committed as Argentina’s government in taking on the challenge of transforming the sector.

2.2. The new policy

The new policy was put in place in 1992-93. Deregulation of traditionally highly regulated port services was introduced formally by decrees limiting regulation to safety, environmental protection and user protection from violations of competition. Liberalization of key port activities occurred through contractual arrangements with stevedoring companies, deregulation of pilotage and towage services, freedom to establish tariffs, allowing foreign ships to practice cabotage, and abolishing previous labor agreements and norms that were hampering productivity in port operations. The key change however was the decision to privatize ports that could attract private operators.³

The restructuring process. The private sector was given the authorization to build and operate ports of public use. This allowed competition to unfold as it made credible the potential threat to their monopoly power for the existing ports on the extensive area along the Río de la Plata where port operations are feasible. The smallest ports with doubtful interest for large private operators were decentralized and it was left to the provincial governments to decide whether to

³ Port privatization means two things in Argentina : a port can be private strictu sensu and the land is privately owned (Dock Sur is an example). By contrast, terminals (as in the port of Buenos Aires) can be state-owned, and be concessioned for periods ranging between 18 and 25 years. The concessionaries have to invest and maintain the infrastructure as specified in the terms of the concession.

continue their operation. The largest port, Buenos Aires, was divided into three areas with different functions and administrations. The area called *Dock Sud* was transferred to the province of BAs as a port specialized in liquid bulks, especially petrochemical products. The area called *Puerto Nuevo* remained under national jurisdiction and was split into six terminals which would compete among each other and would be concessioned for operations to the private sector. The area called Puerto Sur, still to be developed, would be concessioned to the private sector for new construction and development.

Overall, the new structure was intended to improve port operations by fostering competition both *between* ports and *within* ports, as in the port of Buenos Aires, where 6 terminals now compete for cargo movement and handling. By 1998 there were three main terminals competing in container traffic. The distribution of market shares was the following: terminal 1 and 2 (P&O and local partners) (35%), terminal 5 (25%) and Exolgan (Dock Sud) (30%). Terminal 4 is small and dedicated to general cargo. Terminal 3 is multipurpose: general, cars and passengers, and has lost traffic in favour of a new private port of public use (Zarate) open in 1996. This private port is located 75 kilometers upstream in Rio de la Plata and is gaining market share in cars. Finally, terminal 6 has gone bankrupt. Therefore in containerized cargo only three operators currently compete in the market after the deregulation process.

Inter-port competition is one of the expected outcomes of the privatization and decentralization policy. Dock Sud belongs to the Province of Buenos Aires but it is close to terminals 1&2 and terminal 5. It is in fact part of the port of Buenos Aires, competing in the same hinterland. Dock Sud is a private port initially specialized in liquid bulks but restructured after deregulation in order to compete in the container business. There is some concern about unfair competition between Dock Sud and the other private terminals in terms of the different amount of taxes paid to the State and the Province. Dock Sud bears a lower financial burden because there is not an equivalent canon to be paid to the Province.

The concessions. In 1995, the New Port Authority awarded the 6 terminals to the highest bidders, that is the bidder offering the highest annual payment to the government. Although bidders were allowed to bid for more than one terminal, they could only be awarded one. The concession terms ranged from 18 to 25 years. During the term, the concessionaire has exclusivity over all loading and unloading services at the terminal but must guarantee service to anyone demanding it. The government set maximum cargo charges in the bidding documents and concessionaires had to specify their tariffs in the contract subject to this cap.

The government also privatized waterway dredging through a 10 year concession to dredge and maintain the waterway connecting Santa Fe and the Atlantic Ocean. This involves deepening to 32 feet a waterway with a length of 465 miles. The concessionaire charges a toll for the use of the waterway. The price structure consists of two components: signaling (buoys) and drawing, in order to reflect width and depth, the two key determinants of costs. The signaling costs are allocated according to ship size, and the tariff is related to the net registered tons of the ship. Dredging costs are allocated according to the depth required by the ship (therefore they are drawing-related), and tolls increase with distance and do not cover total costs as the government subsidizes the project. The strategy is to reduce public support in the long term.

2.3. The results

The winning bidders offered annual payments of US\$32.5 million, considered to be a significant step towards the fiscal objectives of the reform. The performance of Argentinean ports has also changed dramatically since deregulation. Table 1 summarizes the structural transformation of port infrastructure and services once privatization combined with liberalization were introduced in a heavily protected and inefficient environment.

Table 1: Selected performance indicators for the port of Buenos Aires

Indicator	1991	1995	1996	1997
Cargo (thousands of tons)	4,000	6,000	7,500	8,500
Containers (thousands of teu's)	300	540	752	1,023
Capacity (thousands of containers per year)	400	1,000	1,300	1,300
Cranes	3	13	13	13
Operational area (hectares)	65	95	132	132
Productivity (tons per worker per year)	800	3,000	3,050	3,100
Average stay for full containers (days)	2.5	1.5	1.5	1.3
Cost for container imports (US\$ per ton)	450	120	120	120

Note: public operation in italics

Source: Ministerio de Economía

Annual container traffic jumped from 300 thousand to one million. Although this growth is partly explained by the recovery of the national economy, the increase in capacity, productivity per worker and the reduction in costs and average stay of a ship clearly show that efficiency and competitiveness are two main characteristics of Argentinean ports after port privatisation.

Decentralization has led to the closure of the small, unprofitable ports transferred to the provinces, with large net savings. Most of the savings have come from improved labour

productivity, however. At the port of Buenos Aires, total employment fell from about 8,000 just before the reforms to 2,500 in 1994 and has remained around that level. The liberalization of operating rules drastically reduced the requirements for stevedores in the port of Buenos Aires. This, jointly with the introduction of modern systems of port management, has increased labor productivity four-fold. The port is now open 24 hours a day during all the year (December 24th and January 1st excepted). Tariffs for port services have also declined by varying amounts depending on the port, ship size, and type of service.

Summing up. Overall, the deregulation and privatization of port and maritime transport, combined with other major economic reforms, have had a considerably positive impact on external trade, maybe the ultimate indicator of success for this sector. The decline in Argentinean ports' market share was quickly halted. Maritime transport regained its historical share in Argentine external trade, accounting for more than 90 percent of exports by volume and about 75 percent of imports.

3. FREIGHT AND PASSENGER RAILWAYS

3.1. Before deregulation and privatization

The integrated national public enterprise responsible for railways services, *Ferrocarriles Argentinos* (FA), had been losing traffic and market shares over the years. Between 1965 and 1990, intercity passengers declined by 26 percent and metropolitan passenger by 35 percent. Freight services were more adversely affected, with a drop of 50 percent in traffic during the same period. Between 1970 and 1989, the railway share in both freight and intercity passenger markets fell to about 8 percent from levels of 14 and 11 percent, respectively.

Financial performance continued to deteriorate in the years before 1989. For more than 15 years prior to privatization, FA's wage bill alone exceeded its total revenue. During the period 1980-88, the estimated gap between FA's operating revenues and operating and capital expenditures amounted to an average of US\$1,652 million per year (1992 US dollars).

As in the case of ports, the factors that explain the decline of Argentina's railways are similar to many other large national railway companies:

(i) *Lack of commercial orientation.* Many of the problems experienced by FA were typical of large national railway companies. FA did not have a clear commercial policy. Managers were concerned

more with production targets than with satisfying user needs. They were also heavily influenced by the interests of labor unions and equipment suppliers. FA had too many employees for the amount of traffic carried; operating practices were outdated, and railway track and rolling stock maintenance was deficient.

(ii) *Pricing policy.* The lack of commercially-oriented pricing and investment policies explained many of the difficulties faced by the Argentinean railways. FA did not have an explicit rates policy, but freight rates were set at about 70 percent of the level offered by truckers. This policy satisfied a demand for low-quality services, which was highly costly and conducive to loss-making behavior. Likewise, FA's investment policy had no commercial rationale. Uneconomic lines were maintained to accommodate labor union's requests and provincial political interests. Locomotives were allocated to uneconomic services which did not generate sufficient funds for maintenance and investments.

(iii) *Poor investment.* FA operated a national network of 35,000 kilometers and employed 92,000 people. As a result of the lack of commercially-oriented policies, FA could not generate sufficient internal funds to maintain and improve the network adequately, further contributing to the deterioration of track and equipment. By 1990, for example, 54 percent of the total network had its track either in bad or fair condition, and only 49 percent of a total fleet of 992 locomotives were available for service.

3.2. The new policy

The main objectives of the reforms were to reduce the railway's deficit and to stop the deterioration of the service and once more competition for concessions were going to be the main implementation instrument. A series of policy decisions adopted between 1989 and 1992 ultimately gave shape to a railway reform strategy that was based on horizontal unbundling and privatization through concessions. The fully integrated and centralized network was divided into separate businesses: metropolitan commuter rail, freight services and intercity passengers.

The Restructuring. The metropolitan suburban rail services and Metro (*SUBTE*) of Buenos Aires followed a model of unbundling and concessions similar to that of the freight concessions. Seven suburban railway services were identified according to the different rail networks that existed in the 1940s before the creation of FA: *Mitre, Sarmiento, Urquiza, Roca, san Martín, Belgrano Norte* and *Belgrano Sur* (see table 2). The urban rail service provided by the metro company was

placed in a bidding package with the *Urquiza* line, whose end of line station is physically integrated with the terminal station of the B line of the underground. These services were then concessioned to the private sector.

Freight services were partitioned into sub-networks, mainly, but not exclusively, according to geographical (old private railways) and track (gauge width) criteria. More specifically, the freight network was partitioned into 6 sub-networks with a total track of 27,000 kms. Each sub-network was then concessioned to private consortia. Freight concessions remained vertically integrated: each concessionaire had to undertake all of the activities involved in railroad operations, from the improvement and maintenance of fixed facilities such as stations and rail track, to the dispatching and movement of trains as well as marketing and financial control. Concessionaires were given the freedom to introduce new working rules and practices. Most intercity passenger services were transferred to the provinces because they were not commercially attractive. Provincial authorities were given the choice between running the passenger service and phasing it down.

Both in passenger and freight services, the State has remained the owner of the fixed facilities, including track, stations and the rolling stock. The concessionaires has to pay a fee for the use of the infrastructure, and undertake project-specific annual investment as specified in the terms of the concessions. The length of the concessions were 10 years for metropolitan railways, 20 years for the metro and 30 years for freight railways.

The concessioning process. Metropolitan railway concessions were awarded on the basis of a single parameter: the lowest subsidy requested by the concessionaire to operate the line and undertake the specified investment and rehabilitation program. The lowest subsidy is measured as the first ten-year present value of the annual subsidy flow required to operate the line and undertake the investment plans, net of the annual flow of the fee (or “canon”) offered to be paid for the use of fixed assets such as track and stations. This method of awarding the concessions was more transparent, and probably induced a more rational behavior from potential concessionaires, than the method used for the railway freight concessions.

Freight concessions followed the single operator model and granted the concessionaire a monopoly to run the services during the life of the concession. FA would not be allowed to compete with the concessionaire, while concessionaires were not required to run passenger services. This single operator strategy meant that competition would not arise from several operators using the same track, but from several potential operators bidding for the right to provide the service in isolation during the life of the concession. This unbundling strategy was chosen because of the

complexity found in establishing the operation rules in the previous attempt to unbundle railways along horizontal lines. It was not the recommendation of any elaborate and comprehensive study of options, but the result of historic inertia and political consensus. The political expediency required to carry out the reform was another factor that favored the choice of the vertically integrated option. Operators have the option to run intercity passenger, but must allow access to the track to other passenger operators in exchange for a toll. This separation between freight and passenger services was decided because the freight business was not profitable enough to continue cross-subsidizing passenger operations.

Metropolitan railway concessions differ from freight concessions in two aspects. First, while freight concessionaires were expected to be profitable and pay their fees and rents to the State, it was accepted from the start that suburban rail operations might need fiscal support to operate the services, but most importantly, to undertake the much needed rehabilitation and investments in track and rolling stock. The Government identified for each line the amount and type of investment needed and private operator was expected to undertake such program.

Viability studies of the intercity passenger services concluded that only one corridor, *Buenos Aires-Mar del Plata*, was commercially profitable. Low traffic levels prompted the government to decide not to subsidize any of them. Instead, the government offered the provinces the option to continue providing the services at their own expense. Most provinces rejected this offer, so the routes were closed. Provinces that accepted the offer entered into concession agreements with the state, which transferred to them the rolling stock and other equipment necessary to run the services. The provinces agreed to subsidize the services and run them over the network concessioned to the freight and computer rail operators, paying a fee to these operators for access to and use of the track.

3.3. The results

The results are not that clear cut for the subsector as whole. As discussed in the later , the mixed reviews have ended up in a 1998-99 renegotiation of most contracts. This stems from the fact that the extremely high expectations promoted at the time of privatization have not been met. Compared to the situation prior to privatization however, the following discussion shows that overall, the improvements in service quality have been quite significant. The most immediate and painful change for the system as a whole was the reduction in employment from 92,000 workers to

about 17,000 in 1998. Politically, this is still proving to be a tough sell mainly because the fiscal goals have not really been achieved as expected. In spite of the privatization and the reduction of the required public expenditures in the sector, the government is still spending US\$400 million/year in subsidies, in addition to a commitment to pay for US\$6 billion in investment over the next 20 years.⁴ But the specifics vary tremendously across concessions.

Metropolitan. Tables 2 reflects the evolution of the metropolitan railways concessions and the underground of Buenos Aires. These indicators show significant improvements in the service level and a positive demand response to better service in all lines.

Table 2: Performance of Metropolitan Railway Concessions

(all units in millions)		1993	1994	1995	1996	1997
Mitre	Revenue passengers (\$)	34.41	38.29	53.48 [§]	69.81	80.58
	Car-kms	16.28	16.92	14.47 [§]	21.70	24.16
Sarmiento	Revenue passengers (\$)	60.47	61.27	81.88 [§]	99.37	111.51
	Car-kms	20.28	20.68	17.92 [§]	23.74	29.07
Urquiza	Revenue passengers (\$)	16.79	22.46	23.15	24.72	24.95
	Car-kms	8.53	9.24	9.68	9.78	10.26
Roca	Revenue passengers (\$)	64.91	75.77	116.46	136.02	147.03
	Car-kms	25.97	33.80	38.90	43.08	48.10
San Martín	Revenue passengers (\$)	21.68	29.33*	38.03	43.51	46.63
	Car-kms	13.47	13.02*	14.96	15.62	16.78
Belgrano Norte	Revenue passengers (\$)	11.81	14.78*	25.37	28.79	32.28
	Car-kms	8.52	8.33*	9.87	10.53	12.96
Belgrano Sur	Revenue passengers (\$)	2.02	4.10 [†]	8.32	11.35	13.11
	Car-kms	2.08	2.51 [†]	4.64	6.35	6.88
Subte	Revenue passengers (\$)	145.32	171.15	187.22	198.88	221.86
	Car-kms	20.08	22.66	25.65	26.76	30.02

Note: public operation in italics.; § Public operation until May 1995.* Public operation until March 1994.† Public operation until April 1994.
Source: Ministerio de Economía

These positive indicators are confirmed by surveys conducted by SOFRES-IBOPE in April 1998 and reported in the press.⁵ Over 85% of the users of the urban trains and of the subway consider that the service offered has improved since privatization, while 10% think it is similar and less than 5% think it got worse. Most service quality indicators have improved as demanded by the contracts. The main outstanding issue is that many users are still unhappy with the stations...but

⁴ Although this compares favourably to a total subsidy of around \$1 billion/year before the reforms, the recent debate surrounding the renegotiation made it clear that the resentment over the reduction in the coverage of the network has been leading some politicians to equate the loss of service to the cut in subsidy.

⁵ El Cronista: "Trenes: Aval de usuarios a operadores", April 15, 1998

their improvement was not addressed that specifically by the contracts. The operators are however likely to be responsive to these concerns because of a tough competition with buses.

So far, the improvements in commuter trains have increased the market share of the railways in the mobility of the metropolitan area of BA's. The global significance of these figures can be seen in Table 3. Although the total number of trips is practically stable in the metropolitan area since 1991, the structure has changed substantially. Car ownership has experienced a rapid growth with its market share in the 20 million daily trips in Buenos Aires increasing from 22 percent in 1991 to 33 percent in 1997.

Besides the quality improvement of suburban railways and the underground, traffic congestion has substantially reduced the commercial speed of buses which, operating without subsidy, have lost market share dramatically, making the underground and change in the modal split, but it is still the predominant mode of transport with 42 percent of total traffic.

Table 3: Mobility in the metropolitan area of Buenos Aires (Thousand of daily trips)

MODE	1970	%	1991	%	1994	%	1997	%
Railways	1588	7,05	1162	5,76	1219	6,30	1755	9,06
Underground	1315	5,84	554	2,75	877	4,53	1067	5,51
Buses	12858	57,10	11765	58,37	9588	49,51	8138	42,02
Car	2700	11,99	4500	22,32	5700	29,43	6425	33,17
Th	1656	7,35	660	3,27	777	4,01	777	4,01
Others	2399	10,65	1517	7,52	1207	6,23	1207	6,23
TOTAL	22516	100,00	20157	100,00	19368	100,00	19369	100,00

Source: operators' annual reports and Comisión Nacional de Regulación de transporte. Ministerio de Economía

From a financial point of view, private passenger services operations are having a clear impact. The burden of the costs is shifting from the government to the passengers. Private operators are asking for an increase in the current subsidy levels for the subway to cover operating expenses and some investment. For the passenger system as a whole however, subsidies are now shrinking for the other passenger concessions dropping from US\$.30 in 1995 to US\$.11 in 1998 with an increase in the number of travelers from 163 million to 217 over the same period. This increase in demand is requiring additional investment in spite of the early fulfillment of the investment obligations by the concession with the fastest growing traffic levels. In exchange for this new investment, the private operators of these passengers trains have asked (and obtained) higher tariffs and longer concessions. Most operators will get a 17 to 30 years extension (till 2017 to 2035

depending on the concession) and an average tariff increase of 80% (spread over 4 years) over a US\$.60 average tariff to pay for additional investments of about US\$ 5 billion (most including service quality improvements such as the requirement to have more air conditioned wagons with more seats).⁶ In loss making railways like *Belgrano Norte* and *Belgrano Sur*, the price increase is basically designed to keep the agreed investment plan alive and to progressively reduce the operating subsidy. The process is hotly debated in Argentina and for the users exposed to the higher initial tariffs, the increase is likely to represent an increase in monthly travel costs significant enough to raise some concern.

Intercity. There is little available information on the intercity passenger services run by the Provinces to a large extent as a result of the decentralization strategy adopted at the time of the reform which covered not only the responsibility for the service but also its monitoring . The most important issues raised stem from two main sources. The first is the concern with the level of subsidies these services receiving are demanding from financially constrained Provinces. While the political value of maintaining their operation are easy to understand, many observers have been questioning whether they represent value for money or urged to consider fairly the alternatives. This debate has however not yet taken place formally and remain a marginal source of concern locally. The second issue has a more pressing dimension. There are interactions between these services and the freight concessions who control and maintain the track, Passenger services need more maintenance than freight trains and freight concessionaires are reportedly not doing a particular good job of maintaining the track at stipulated standards. In addition, the access fee that freight concessionaires charge the passenger trains may be too high as compared to international standards (up to 10 times in some cases) and could be an issue the regulatory agency will soon have to deal with.

Freight. The level of tonnage carried by the new concessionaires has increased significantly, from 7.4 millions tons the last year of public operation to over 17 million in 1997. Despite this recovery the level of traffic realized is considerably below that projected with the only exception of *Ferrocarril Mesopotámico*. In addition, the oldest concession, *Ferroexpreso Pampeano*, has not been able to improve much and has been finding difficulties associated with floodings and adverse markets conditions. As a whole, private operators are reaching an average 70 percent of the

⁶ The average initial tariffs varied from US\$.34 at the beginning of the concessions and are now US\$.54 and US\$.68 for increase of 40% to 60% depending on the concession. The additional increases would vary from 50 to 100% over the next 4 years.

projected traffic and, according to some estimates, actual revenues may be between 50 and 60 percent of expected levels.

The under-performance of freight operators is partly due to the strong competition from trucks. FA followed the practice of setting the rates at 70 percent of the trucking rates. Private freight rail operators assumed that their improved service would allow higher rates without fully anticipating the likely response from truckers and the possibility that the demand would not materialize as expected. *Ferroexpreso Pampeano* (Rosario-Bahia Blanca concession), for example, has had losses during its first three years of operation due, among other reasons, to increased competition from trucks, delays in the privatization of the port of *Bahia Blanca*, and a drop in the international price of grains. Even though the resurgence of the Argentinean economy is said to be changing substantially the pattern of production, the type of products carried by private rail operators does not seem to differ substantially from that carried before privatization.

The optimism in projecting demands levels, possibly induced by the bidding criteria used to award the concessions, may bear some responsibility for the gap between realized and expected traffic levels. For the freight concessions, the private consortia did not have to accept a pre-specified program of investments, unlike the bid for the metropolitan railways. Instead, they had to identify investment needs and propose an investment program for the first 5 years. This would be compulsory to fulfill, but could be modified from the sixth year of operations if demand conditions warranted it. Nevertheless, the size of the present value of the investment flow during the first 15 years of the concession had a strong weight in the bid evaluation criteria. This criterion of selection undoubtedly may have induced the concessionaires to make demand projections and associated investment promises that were unrealistic but helped them obtain the concession.

The Government is reviewing the initial contracts, to concentrate investment efforts in the main corridors, to close the rest of the corridors and to allocate a fixed share of revenue to investment. Investment commitments made by the concessionaires are reduced and arrears in canon payments are being converted into new investment obligations. In total, this means an overall investment obligations of US\$30-35 million/year to operate a network of about 22,000 km. In exchange, the concessionaires are giving up on their exclusivity rights. In general, this is not sitting well in the current presidential election environment where the fact that expectations from freight concessions have not been met, combined with the fact that the concessionaire have arrears in canon payments of close to \$15 million is proving to be a challenging political item for the current administration.

Summing up. Overall, and in spite of the tough debates taking place in this election year, the outcomes are perceived as improvements since privatization. Nevertheless, there is some concern on the distribution of benefits between government, producers and consumers as illustrated by the recent debate surrounding the renegotiation of the contracts and the resulting tariff increased for passengers and reduced canon for freight concessionaires. The vertical integration of some railway operators with railway construction and equipment suppliers may make it profitable to renew equipment or to invest at a higher than reasonable rate in some segments of the network. However, there is no strong evidence that this is happening even if the incentive to do so appears to be high and basing re-negotiations on price increases and quality improvement plus longer concessions would be a natural consequence of this incentive.

4. ROADS

4.1. Before deregulation and privatization

Argentina has a mature and well-connected network of 500,000km. The national network (75% of traffic) covers about 38,000 km (75% paved), the provincial network 181,000km (18% paved) and the rest is municipal (29% paved). Its main problem at the time the reforms were being conceived was poor quality due to a lack of maintenance. At the national level, maintenance expenditures had been squeezed by the shortage of government funding due to a strong decline in own sources of funding and in particular the end in 1991 of earmarking of taxes (fuel taxes mostly) to the financing of roads. In fact while during much of the 1980s about 90% of the resources available to the National Road Agency were from earmarked taxes, by 1992, 100% of its resources were from general revenue sources allocated through the standard budgetary process.

The financing problem was compounded by the high cost of public sector construction and maintenance. Construction costs averaged about twice what might be considered best practice (up to 5 times in some provinces as a result of dubious public works procurement practices).

4.2. The new policy

The reform of the roads sector started in 1990. To address the major costs and financing problems of the sector, its primary objectives were the reconstruction and maintenance of existing

roads and the reduction of the public finance required by the sector. Involving the private sector in exchange for the right to charge users tolls was seen as a way to both shifting the financial burden to users and maintaining roads more efficiently.

Restructuring. The general privatization strategy was to unbundle financially viable roads into build-operate-transfer (BOT) concessions awarded through competitive bidding. Most of the traffic is concentrated near major city nodes, such as Buenos Aires and to a lesser extent Rosario and Córdoba. Thus, the national concession program has so far focused on the multilane roads and freeways serving these cities, along with other intercity and major city access roads. It applies now to almost 9500km of roads. The concession program was complemented by an auction of management contracts (generally for 5 years) for rehabilitation and maintenance covering now about 12,000km of national roads divided into 400 sections and auctioned out into 61 contracts. Also, non-toll concession contracts cover about 1900km of national roads (6 corridors) and allow the government to rely on a private financing of the initial rehabilitation in exchange for a commitment to future disbursements of monthly subsidies during the 10 years term of the concessions. A more recent program called “km/month” covers basic maintenance and service contracts for 4100km of less travelled roads. Overall, about 70% of the national road network is de facto under private operation. The discussion below focuses on the evolution of the concession strategy of the national government.

The concessioning process: part 1- The Intercity Highways In the first wave of privatization, the government concessioned about a third (3000km) of the intercity highway system, offering twelve 12-year concessions in 1989 and awarding them in early 1990. The segments had traffic averaging at least 2,000 to 2,500 vehicles a day, a level considered viable for private concessions that focused on road maintenance as opposed to new construction. In return for the right to collect tolls, the concessionaires were required to undertake a program of maintenance, rehabilitation, and capacity improvements. Built into the concessions was a toll structure subject to price cap regulation. It set a uniform value per kilometer for each class of vehicle and was consistent across all concessions. The maximum toll was five times the basic toll (US1.5/100km) and was to be determined by vehicle size, number of axles and distance traveled between toll booths. To protect concessionaire revenues against inflation, tolls were to be updated using a formula giving roughly equal weight to the cost of living index, the wholesale price index, and the value of the U.S. dollar. But the government provided no revenue guarantees to the concessionaires.

The service levels, defined to reach past service levels, were measured by an index of road serviceability (the state of the pavement) ranging from 1 to 10. Targets were set for three periods: during the first three years, the objective was to reach an index of about 6.4; in the following seven-year period, the index was to improve to 8; and during the last two years of the concession, it could not fall below 7.5. The concessionaires obligations included undertaking certain investments before starting to collect tolls, such as correcting the most serious deficiencies in the pavement and in vertical signaling, and undertaking other investments during the term of the concession to achieve the serviceability targets. Although the bidding documents did not specify the size of the investments required to reach the serviceability targets, it was estimated that at least 50 percent of the network would have to be re-paved during the first three years, with another full re-pavement during the remaining nine years of the concession. The concessionaires were also initially obligated to pay a fee (*canon*) to the state for the use of the road infrastructure during the life of the concession and to take legal responsibility for any accidents resulting from poor road conditions.

The concessions were awarded in twelve simultaneous bidding contests. The bidding was competitive, with 147 bids submitted. The concessions were awarded to thirteen consortia formed by forty-six private companies. These thirteen consortia were to pay *canon* totaling US\$890 million (1990 dollars). While the *canon* was the key criterion in the bid selection, there were many other criteria, including technical qualifications and timing of investment.

These intercity road concessions had been in operation for only five months in February 1991 when the government decided to suspend the contracts and renegotiate them. Several developments led to that decision. First, the prohibition of indexation introduced as part of a major macroeconomic adjustment plan was going to have a direct impact on the tolls. Second, many concessionaires started to collect tolls before undertaking the required investments. Third, toll booths were located either at a relatively short distance from one another or near urban centers in order to capture suburban trips lack of access alternatives created captive traffic. These three developments prompted public protest and strong pressure to reduce tolls.

The renegotiations resulted in a major overhaul in the design of the concessions. Tolls were reduced by more than 50 percent. To compensate the concessionaires, the *canon* was eliminated, and the government also granted concessionaires a total annual subsidy of US\$57 million for the rest of the concession, which was extended by one year. The subsidy, to be distributed among concessionaires according to the size of their value added tax (VAT) contributions, amounts to a shadow toll because VAT contributions are directly related to traffic levels. The location of toll

booths and the commitments and schedules for road works were also renegotiated, leaving the concessionaires with a significant cuts in the value of the business they had entered two years earlier.⁷ In 1995, in view of the quick expansion of traffic, a second re-negotiation was initiated by the government to include new investments in the concession areas. As long as these would not represent more than 20% of the net present value of the total investment obligations (including those covered by the initial contract), the incumbent would be eligible for a direct negotiation with the government with a view to extend their concession term. Otherwise, the contracts for new investment would have to be auctioned publicly. So far (early 99 or 4 years later!) only one such renegotiation has succeeded (the concessionaire of corridor 18 got a 15 years extension in exchange for a commitment to US\$53 million of additional investment and for giving up on the subsidy promised during the 1991 renegotiation). The other concessions are unlikely to get extensions of more than 3 years and will in exchange make new investments of about \$150 million and give up the subsidy promises or at least a strong reduction in their levels before their end at the end of the original tenure of the contract.

The concessioning process: part 2 – The Buenos Aires Access Roads. In 1992, the government initiated a second wave of concessions for the maintenance, operation, and improvement of three strategic access highways radiating from Buenos Aires. A fourth concession with no right to collect tolls was negotiated with a construction company that had been building a road under a public contract for many years. They highways add up to roughly 200km.

The government, benefiting from its experience with the intercity concessions, designed simple, straightforward concession terms and bidding criteria for the Buenos Aires access roads. Bidders received a comprehensive concession contract detailing the amount and schedule of required investments, the required service level, and the risk-sharing arrangements between the government and the concessionaire. The contract allocated the bulk of the project risk to the private concessionaire by precluding any revenue or traffic guarantees or any other guarantee of financial support from the government. In addition, the contract assigned to the concessionaire the responsibility for risks associated with pending land expropriations. And it required the concessionaire to build parallel untolled access roads, mainly collector streets. The bidding criteria were reduced to one variable: the lowest toll offered.

⁷ According to an interview given by Raul Costamagna, the Public Works Secretary who is responsible for the monitoring of the concessions interviewed by one of the main Argentinean newspapers, *El Cronista*, in the December 13 1998, the companies are still having rates of return of 26% to 38% and the government considers that a reasonable rate of returns should be between 12 and 16%.

The main features of the concessions for the Buenos Aires access roads are the following: they are twenty-two years and eight months long; the state retains ownership of the road infrastructure; all new construction, rehabilitation, improvement, and maintenance operations are performed by the concessionaire, which is legally responsible for any accident caused by poor road conditions; the basic toll is the one bid by the concessionaire and is subject to some constraints: it cannot be higher than a cap set by the government. This cap is calculated as the lower of the value of the benefit (in terms of cost reductions) obtained by the road users and of the reasonable rate of return allowable to a concessionaire. The concessionaire is obligated to carry out specific works before starting to charge tolls and other works throughout the life of the concession and, at the end of the concession, the concessionaire must transfer the roads in perfect maintenance condition. The concessionaire derives revenues from tolls and from commercial exploitation of service areas as authorized by the regulator, Organo de Control de Concesiones. The government does not guarantee minimum traffic levels and provides no other guarantees.

While these concessions were more carefully prepared than the earlier ones, they have not been problem free. First, there was not much competition among bidders. The numbers of bidders at most 2 (in two of the cases). The potential benefits for the users had been estimated by the government at levels varying from US\$1.92 (the airport access) to US\$3.19 (West access). The highest bid was \$1 in two of the cases and \$.56 for the airport access. Tolls have since been increased for all access roads by over 10%.

4.3. The results

Overall, the results of the concessions have been mixed so far with respect to the initial objectives. In spite of significant improvement in quality and in traffic, the fiscal gains expected were not as high as expected initially to a large extent as the impact of the 1995 world financial crisis that influenced demand quite significantly in Latin America. Since the 1998 crisis did not help, a new round of renegotiation was needed in 1998 and recently concluded as discussed below.

For the intercity highway concessions, the success in terms of quality of roads is clear. Maintenance of this intercity highway system, including the concessioned portions, has improved significantly. The share of paved roads in bad conditions declined from about 30 percent in 1989 to 25 percent in 1993, and the regulator predicts that it will fall below 10 percent by 1999. The success in terms of traffic increase is also hard to deny. Road use has more than quadrupled between 1991

and 1997, raising toll revenues from almost US\$60 million in 1991 to almost US\$300 million in 1998...but this still required an accumulated (unpaid) subsidy by the government of US\$120 million (according to the government) to US\$200 million (according to the concessionaires). The most disturbing fact, politically, is that this has happened in spite of a 50% increase of the average toll (from US1.1 to about \$1.6/100km) during between 1991 and 1998.

This is part of the reason why the results are viewed by some as mixed. While maintenance of the concessioned network is no longer a major drain on government budgets, government annual subsidies had increased from US\$23 million in 1991 to more than US\$65 million by 1996, in part because of the government's reluctance to allow toll increases. Since these subsidies are much higher than initially anticipated and since they remained unpaid, it created a tension between the concessionaires and the government. In addition, investments were behind schedule because the first renegotiations reduced the concessionaires' potential returns. All this has resulted in a new renegotiation which ended in early 1999 with an extension of all contracts until year 2006 with no increase in tariff for now and the cancellation of the government liability for subsidies in arrears. Tariff will be adjusted every time cost increases have reached more than 5%.

As for the concessions for urban access roads have, while they provided some badly needed urban highway capacity that the government otherwise might not have built, expectations have not yet been met either. Table 4 summarizes the evolution of traffic and tolls collected on these 4 access roads.

Table 4: Evolution of Traffic and Revenue in Buenos Aires Access Toll Roads

		La Plata- Buenos Aires	North	Ricciardi	West	TOTAL
1995	Number of vehicles in traffic equivalent units (average daily traffic)	8,747,744 (45,567)				8,747,744
	Revenue in US\$ million	13.7				13,7
1996	Number of vehicles	30,531,526 (78,113)	36,912,700 (218,451)			67,444,226
	Revenue in US\$	47.9	43.7			91,6
1997	Number of vehicles	35,758,100 (90,163)	101,423,750 (232,384)	32,806,568 (98,973)	23,916,121 (92,327)	193,904,539
	Revenue in US\$	56.1	120.2	16.8	11.9	204,9
1998	Number of vehicles	42,018,634 (104,339)	113,637,947 (257,132)	46,900,140 (110,355)	51,936,972 (115,214)	254,493,693
	Revenue in US\$	65.9	125.7	23.9	37.1	252,3
Total	Number of vehicles	117,056,004	251,974,397	79,706,708	75,853,093	524,590,202
	Revenue in US\$	183.7	289.2	40.7	48.9	545,8

Traffic growth is good and so appears to be revenue. The disappointment stems from the fact that achieving all the objectives is taking longer than expected. Construction for two of the four access concessions has been delayed by legal problems resulting from much harder land expropriation and household relocations than expected. Because of the delay, the concessionaires have been unable to start collecting their tolls needed to meet commitments made under the financing plan. The other two concessionaires could initially collect only part of their tolls because not all their facilities are in place as a result of technical delays. Moreover, in three of the four concessions, required investments were delayed quite significantly while in the fourth, investment was accelerated as demand was putting pressure on the concessionaire.

Overall, three main lessons can be drawn from the reforms in the road sector. First, it is important to have simple and transparent criteria for the bidding. In the initial round for the intercity concessions, the bidders had to satisfy a long list of technical and financial criteria, all with different weightings. By contrast, bidding for the Buenos Aires access road concessions used a single criterion, and investment obligations were discussed with potential investors before the bidding documents were finalized. Using a single, unambiguous criterion not only provides transparency in the award process. It also avoids unnecessary complications resulting from trade-offs between offers on multiple criteria by competing bids.

Second, the rules for renegotiating contracts should be spelled out as early and as clearly as possible. Adequate rules were not issued until 1995. These new rules specify the conditions under which changes in some aspects of the contracts are allowable, and they recognize the importance to the concessionaire of ensuring that re-negotiation does not alter its financial return when the problems that led to the re-negotiation are beyond its control. There have been several cases in which such problems have forced the government to renegotiate the contracts. In other case, pegging the new peso to the dollar made the contracts' tariff escalation clauses illegal. Before the new guidelines were adopted, the concessions were renegotiated bilaterally, with each party seeking the best deal it could get. Now, all the allowed options and the terms of eligibility are clearly specified so that all concessionaires are playing by the same rules.

Third, institution building must be taken seriously. Before the concessioning, all the main technical functions (planning, design, maintenance, construction) for the national highway network were the exclusive responsibility of the Dirección Nacional de Vialidad (DNV). The same functions were performed by similar agencies at the provincial level. Poor coordination among these agencies led to poor planning and inefficient decisions. The reform transferred the management and control

of roads to the provinces. The DNV was to become a national planning and coordinating agency responsible for allocating resources and auditing their use for national highways while also acting as a regulator for these highways. The DNV does not yet fully perform either function. It is not independent, and it is inadequately organized and staffed to effectively supervise the concessionaires. Nor does it require meaningful reporting by the concessionaires. Similar institutional weaknesses occur in supervision of the access road. The responsible agency, located in the Secretariat of Public Works, does not collect or publish information on a regular basis, and its staff, though very committed, have been neither assigned clear goals nor provided with sufficient resources.

Summing up. Overall, , the outcomes are also perceived as improvements since privatization. The main problem here has been in the interaction between the government and the concessionaires. Subsidies levels ended up increasing beyond expectations and since the government accumulated arrears in the payments of its subsidies, it increased the perception of a high residual role in the financing of the private sector. While this has become an issue in an election year, it also eased the justification of an extension of the inter-city contract in exchange for a “no more toll increase” position widely supported by users. A less pleasant outcome for the government was a debate as to whether the contracts should be auctioned again instead of renegotiations with the incumbents.

5. CONCLUSIONS

The experience of the Argentinean transport reform has showed that privatization and deregulation provide efficiency gains that can be delivered to users while improving the fiscal situation. So far, and in spite of the unexpectedly high residual subsidy requirements of the sector, the fiscal cost is indeed lower, services have improved and the new investment is taking place. This is the main achievement of an economic transport policy based on a mix of competition *for* the market, through concessions, and competition *in* the market. Economic indicators clearly point out to increases in capacity, better price-service level combinations and positive demand response. This may be viewed as a major deception for anyone who expected the end of the public sector in Transport. The fact is this experience shows that it is hard to totally eliminate public financing in the sector, but it is certainly possible to reduce it drastically. For railways, total subsidies/passengers are now less than a third of what they were under public operation (US\$.76 per passenger in 1986 assessed in 1996

US\$). there are no subsidies left in ports and with the latest round of negotiations, there should be hardly any subsidy in intercity roads.

The need for better targeting of some of the subsidies towards the poor is an issue likely to become important soon, as the last wave of contract extensions in rail and roads comes to an end. But this is likely to be a natural outcome of the extensive formal and informal consultation process that has surrounded this latest round of contract renegotiations. Already there are special arrangements being negotiated in some neighborhood between users and concessionaires and the government is looking into options for passenger trains. All this is work in progress and still to recent to be able to report any significant breakthrough.

Argentina's decade long experience also shows that there is a learning by doing in the reform process. For inexperienced new regulators, new problems and challenges quickly develop in the control of monopoly power and of the incentives for private investment in the long run. The design of the reform process and the "government commitment" to minimize its role in the sector and to respect its original promises to users as much as to concessionaires are crucial for the sustainability of reforms. Argentina's experience shows that it is very important to build up the regulatory capacity needed to monitor the contracts, in particular when initial uncertainty with respect to demand and cost conditions is strong and renegotiation is a most likely outcome of a daring reform. As always, its main challenge on monitoring contracts is to get enough information to reach an adequate balance in its decisions on the distribution of efficiency gains between private investors and consumers...and this is the area in which Argentina may not have yet met the challenge.

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